



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,391	04/11/2001	Curtis Lee Carrender	12813-B	3770

7590 11/05/2002

Intellectual Property Services  
Battelle Memorial Institute  
Pacific Northwest Division  
P.O. Box 999  
Richland, WA 99352

EXAMINER

NGUYEN, PHUNG

ART UNIT

PAPER NUMBER

2632

DATE MAILED: 11/05/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/833,391

Applicant(s)

CARRENDER, CURTIS LEE

Examiner

Phung T Nguyen

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5-8, 11-14, 17-20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mays et al. [U.S. Pat. 5,828,693] in view of Wu et al. [U.S. Pat. 5,784,686].

**Regarding claim 1:** Mays et al. disclose a spread spectrum frequency hopping reader system which comprises all subject matter as follows:

- a. a frequency-hopping source configured to sequentially generate radio-frequency signals at pseudo-randomly selected frequencies (col. 3, lines 49-54);
- b. a transmitter 10 coupled to the frequency-hopping source and to an antenna circuit (figure 1, col. 3, lines 5-7);
- c. a signal processor 24 (figure 1, col. 3, lines 9-34) wherein the signal processor is configured to receive the reflected radio-frequency signals and to extract data contained within the reflected radio-frequency signals;

Mays et al. disclose a homodyne radio for transmission by the antenna to a tag col. 2, lines 22-27). One skilled in the art would have recognized that the heterodyne receiver (double detection receivers) has the advantages that the selectivity can be easily defined by a band-pass filter at the intermediate frequency. Mays et al. fail to disclose a heterodyne receiver coupled to the antenna circuit and configured to receive on the antenna circuit reflected radio-frequency

signals as claimed. However, Wu et al. disclose an IQ combiner technology in modulated backscatter system comprising the heterodyne receiver for receiving the reflected signals from the tags as seen in figure 1, col. 1, lines 45-50, and col. 2, lines 12-35. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the readily heterodyne receiver of Wu et al. in the system of Mays et al. in order to enhance the system.

**Regarding claim 2:** Wu et al. teach the heterodyne receiver (col. 2, lines 18-21).

**Regarding claim 5:** Mays et al. disclose the frequency-hopping source is configured to sequentially generate radio-frequency signals at regular time intervals (col. 10, lines 50-56).

**Regarding claim 6:** Mays et al. disclose the transmitter is configured to modulated the pseudo-randomly selected radio-frequency signals (figure 1, col. 3, lines 44-54).

**Regarding claim 7:** All the claimed subject matter is already discussed in respect to claim 1 above. Mays et al. also disclose the extracting data contained within the reflected radio-frequency signals (col. 3, lines 28-34).

**Regarding claim 8:** Refer to claim 2 above.

**Regarding claim 11:** Refer to claim 5 above.

**Regarding claim 12:** Mays et al. disclose extracting data from the modulated, transmitted radio-frequency signals at the RFID tag and storing data in the RFID tag device (col. 9, lines 8-22).

**Regarding claim 13:** Mays et al. disclose extracting data from the modulated, transmitted radio-frequency signals at the RFID tag and modulating the reflected radio-frequency signal on the data extracted at the RFID tag device (col. 9, lines 65-67, and col. 10, lines 1-5).

**Regarding claim 14:** All the claimed subject matter is already discussed in respect to claim 1 above.

**Regarding claim 17:** Refer to claim 6 above.

**Regarding claim 18:** Mays et al. show the RFID device configured to reflect radio-frequency signals via continuous-wave backscatter (col. 1, lines 10-17). Plus the consideration of claim 1 above.

**Regarding claim 19:** Refer to claim 6 above.

**Regarding claim 20:** Mays et al. show that the RFID device comprising a passive RFID tag device (col. 1, lines 12-17).

**Regarding claim 22:** Mays et al. disclose the interrogator is configured to modulated the pseudo-randomly selected transmitted radio-frequency signals and the RFID device is configured to extract data from the transmitted signals (col. 11, lines 65-67, and col. 12, lines 1-10).

**Regarding claim 23:** Refer to claim 12 above.

**Regarding claim 24:** Refer to claim 13 above.

3. Claims 3, 4, 9, 10, 15, 16, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mays et al. in view of Wu et al. and further in view of Shober [U.S. Pat. 5,952,922]

**Regarding claim 3:** Mays et al. disclose the di-pole antenna 16 (col. 3, lines 9-12). The combination fails to disclose a first antenna for transmitting the radio-frequency signals and a second antenna for receiving the reflected radio-frequency signals. However, Shober discloses an in-building modulated backscatter system comprising transmitter antenna 204 and receive

Art Unit: 2632

antenna 206 (figure 2, col. 4, lines 66-67, and col. 5, lines 1-4). Therefore, it would have been obvious to the skilled artisan to use the transmitter antenna and receive antenna of Shober in the system of the combination because the separated antenna provides a higher accuracy of directionality and a higher antenna gain than the single di-pole antenna.

**Regarding claim 4:** Shober discloses the low noise amplifier 207 (figure 2, col. 5, line 1) for amplifying the received reflected radio-frequency signals.

**Regarding claim 9:** Refer to claim 3 above.

**Regarding claim 10:** Refer to claim 4 above.

**Regarding claim 15:** Refer to claim 3 above.

**Regarding claim 16:** Refer to claim 4 above.

**Regarding claim 21:** All the claimed subject matter is already discussed in respect to claims 1 and 15 above.

### ***Conclusion***

4 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phung T Nguyen whose telephone number is 703-308-6252. The examiner can normally be reached on 8:00am-5:30pm Mon thru. Friday, with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on 703-308-6730. The fax numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-308-9051 for After Final communications.

Application/Control Number: 09/833,391


Page 6

Art Unit: 2632

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Examiner: Phung Nguyen

Date: October 30, 2002

  
DANIEL J. WU  
PRIMARY EXAMINER 11/01/02